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NATURAL HISTORY IN THE GRADES

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VI. SIXTH GRADE

Pupils of the sixth grade usually are at a stage of development which makes possible and desirable a more prolonged and more intensive study of a few topics as compared with the rather large number that have been outlined in the work of the first five grades. The garden work that was begun during the spring of the preceding school year is used as the basis for part of the sixth-grade work; the other part deals with hygiene and elementary human physiology.

In the preceding spring this grade planted numerous vegetables and flowering plants, some of which have been cared for through the summer. At the opening of school in the autumn the seeds of these plants are available for collection and use in a study of some of the special topics to be considered by the class. In case of plants that mature early and would lose all their seeds during the summer, the entire plants are collected and kept in order that they may be available for school use. The collection of seeds from plants planted by the pupil is in itself a valuable piece of work. Pupils have been studying how plants grow from seeds, how plants must be cared for in order that they may thrive, how pollination is effected, and now the collection and a brief study of seeds completes these general facts of the plant life-cycle. Collection of seeds should be made, carefully labeled and given to the new fifth grade. This supply cannot be

entirely depended upon for all needed seeds for the next year's work of the fifth grade, but will be of some value. It is of great educational value, however, to have the sixth and fifth grades co-operate in this way.

The difference in form, size, color, and number of seeds produced by different kinds of well-known plants is always interesting. Various seed-bearing structures (fruits) are well shown by a good collection of garden plants. Comparison may be made between such fruits as those of the radish, cress, shepherd's purse, sunflower, poppy, geranium, pansy, rose, abutilon, evening primrose, wild lettuce, milkweed, and catalpa. Class or individual trips to vacant lots for the purpose of collecting seeds and fruits will result in augmenting the collection and the interest therein. These fruits should be mounted on large cardboard, being grouped according to their source, to their form, or to the persons collecting them.

How many seeds does a plant produce is the next problem that is presented. Here is begun a definite study of the average number of seeds produced by each of a few kinds of plants, the forms selected for this work being those easily handled as the sunflower, radish, evening primrose, jimson-weed, or catalpa. Careful counts are made of the seeds actually found within a number of fruits (pods or heads), and then the average number of those counted is calculated. In one case of seeds which were very small, one class found how many teaspoons of seeds they had, then by arranging in a row on a sheet of paper one teaspoonful they made their estimate. Since, in most cases, the number varies and since there is danger of error the number of fruits from which seeds are counted should be rather large. It is a good plan to have each member of the grade count seeds from at least one fruit of each kind of plant, then have all calculate the average number. The next step is to determine the average number of fruits borne upon one plant. Sometimes as in the case of the catalpa or rose the material available makes this calculation possible for but one plant. By use of the number of seeds in a fruit and the number of fruits on a plant the total seed-production of one plant is approximated. This total

number produced from a single plant, presents to children in a striking way the large possibilities for reproduction that are constantly occurring.

The next problem is to determine the area of ground that would be required if all seeds produced should grow next year and produce plants similar to the one that produced these seeds. This is estimated by measuring the area of ground covered by one adult plant of the kind under consideration. As before, several are measured in order that a fairly dependable average may be made. Pupils show much difference of opinion regarding what should be considered as the area covered by one plant, and it has been agreed that the space shaded shall be counted as the space belonging to a plant. This is so considered regardless of the fact that other plants may grow in this shaded area. It is best to estimate a length and breadth of the area covered and thus secure an approximation of the number of square feet, since more complicated arithmetical processes would be entangling In order to make certain that the significance of the rate of possible increase of space covered is seen, this calculation should be made with more than one plant, or with a plant and an animal (robin, fish, toad), an additional calculation that is helpful is had by calculating the amount of space occupied or the number of offspring produced by the third or fifth generation. It is only by carefully calculated concrete cases that any real significance comes from this work.

The next problem is found in the pupil's statements already frequently made, such as: "It does not happen so"; "Not so many new plants really are produced"; "How does it come that the earth isn't covered by this plant?" "Why do not more plants grow?" "What becomes of all the seeds that do not grow?" "Why do not more individuals of this kind of plant grow?" The fact that not all grow is at once seen by pupils when they have finished the last problem, and they almost immediately begin to suggest some of the reasons that occur to them in explanation of this fact. Observation, study, and consultation produce many aspects of the situation some of which are: there is not space (room) for all to grow and some are stifled after they have

begun to grow; some places are too dry for these plants to grow and some too wet; not all can secure adequate light, air, and soil; many seeds fall upon unfavorable places and do not germinate; many seeds decay; many seeds are eaten by birds (refer to fifth-grade work upon the food of birds); many plants are devoured by animals, or killed by plant or animal diseases; but a few survive as compared with all that are possible. These are the ones that grow where they can have space, light, air, water, proper temperature, and that are not destroyed by crowding from other plants or by attacks from herbivorous animals or parasites.

At this point reference should be made to seed distribution which was studied in the fifth grade. Some additional study of structures that serve to carry seeds proves valuable in the new light of these studies, there being apparent now more of the real meaning of having a seed germinate in a relatively unoccupied and favorable place. Also it will prove helpful to bring into the room a square foot of vacant lot soil taken four inches deep, and keep it in a box under favorable conditions so that all seeds in it may grow. Once a week count and remove all seedlings and finally determine how many seeds began to grow in this area.

It is not wise to attempt to carry a study of the struggle for existence into further details in the grades. The concrete data, with some of the relatively evident interpretations, are all that should be sought. This, it is hoped, will furnish a concrete basis upon which some years later a more searching study will be made. It is hoped that an interest will be developed which will cause these pupils always to be observant of the abundant illustrations that relate to this problem.

The reader will find that the fulness of the preceding outline suggests the use of more time than will really be needed to accomplish this work. Some classes will require more time than others but six or seven weeks should be ample.

The major part of this year's work is upon hygiene and elementary human physiology. The forthcoming adolescent period, intensified interest in themselves physiologically, socially, and intellectually, an interest in the industrial and social factors

of the environment make this an excellent period for a formal study of this topic. In preceding grades there has been constant admonition by the teacher upon detailed matters pertaining to schoolroom and personal cleanliness, health, and proper positions, exercise, and habits. Indeed, development of habits in proper hygiene must begin as early as does education and continue until their efficiency no longer depends upon constant external stimulus. But at this age it is thought best to give attention to development of an understanding of some of the reasons for proper practices. This should intellectualize some of the previous admonitions, thus giving basis for more faithful performance and extension of habits, and should prepare an intelligent foundation for proper response to the many situations incident to youth.

The preceding elementary-science work leads logically to this work in hygiene. In each grade some study has been made of the life of plants and animals. In schoolroom and garden experiments, in field observations, and in reading there has been a constant study of how plants and animals live; their food, their air and water supply, their relation to one another, the development of young into adults, the diseases that may attack them, pollination, seed-formation, and the new plant, all give in study of both structure and function a background which is believed to furnish the most logical approach to an elementary understanding of the pupil's own body and its needs.

Obviously the amount of experimentation that was used with plants and animals cannot now be made, though much valuable experimentation is possible and necessary. Pupils must look upon their bodily actions from the point of view of experiment; sometimes they must really perform experiments; and often they must interpret their own function in terms of what they know of plants and animals. Good topics for introductory experiments are circulation, respiration, and muscular activity. All know something of each of these functions and each pupil can be interested at once in comparing his condition with that of his fellows. For example, two boys were at the opening of this work called before the class and their pulses taken (a process with which all are

familiar). These boys were then told to run around the block in which the school building stands and return immediately to the room. The pulses were again taken. An explanation of the difference in readings was called for, and this furnished a basis for beginning work upon the circulatory system. The same sort of an experiment is good for introducing respiration and for relating it to circulation. The nature of some of the leading bones and their relation to one another in muscular work may be introduced by a study of several gymnastic feats with which all children are familiar.

Organs and the processes that are performed by means of them are studied not anatomically or from the point of view of physics and chemistry, but from the point of view of their proper efficient working. How the parts of a healthy human animal work when highest efficiency is secured must be made clear. Then to secure constantly this high efficiency attention must be given to things that interfere with it. Improper posture is not wrong primarily because it may lead to crooked bones, though that is bad, but primarily because crooked bones reduce efficiency. Good heart-action, respiration, sight, hearing, digestion, etc., enable us to do more bodily and intellectual work. Abuse of the body resulting in reduction of vitality simply involves disposing of part of our native capital by means of which we might accomplish things. Ventilation, cleanliness, proper bodily temperature, proper sleep, etc., are the conditions under which bodily parts may work properly.

Infection and disease also have a place in this course. By reference again to diseases of plants and animals and to what is already known of human disease a fairly clear notion of the nature of bacterial disease may be given. Some simple demonstrations in growth of bacteria in test tubes, this being elaborated by careful and concrete discussion, proves helpful. The distribution of bacteria, especially disease-producing bacteria, means of infection in case of some of the common diseases, proper water, milk, and food supply are topics for demonstration and discussion.

The influence of alcohol and narcotics is one of the topics that

must be considered in connection with highest efficiency of the human body. This topic, as some others, must be kept free from foolish emotionalism and kept upon the basis of individual and social efficiency. That it is an ethical question is obvious; also bodily efficiency is an ethical question. The best reaction from instruction upon dangers from alcohol and narcotics will doubtless come from a clear and abiding understanding of the relation they bear to the normal work of the human body.

This grade should study the city regulations regarding public health—water and milk supply, garbage and sewage disposal, street-cleaning, the city health department. The school and home garden and the general movement relative to beautifying home grounds should be emphasized in its bearing upon public health.

Such a course in hygiene as here outlined is greatly benefited if a simple, direct, readable, and appropriate book can be used as a pupil's reader. A series of books for different grades has been prepared by Dr. Luther Halsey Gulick. Of this series one well suited to the sixth grade is *The Body and Its Defenses.*

AN EXPERIMENT IN INDUSTRIAL EDUCATION

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A quarter of a century ago educators of the United States saw clearly the need for industrial education. Their addresses and magazine articles on that subject make interesting and timely reading today. The arguments which we are using were used by them.

As the leaders in educational work were looking about for some plan of handwork which could be brought into the curricula of the schools, two carefully worked-out systems were discovered. These were the Russian system of manual training with its abstract exercises, and the Swedish sloyd system with its perfectly graded series of models.

These forms of handwork with various modifications have been gradually introduced into our schools until today the city system which does not include manual training from its primary grades through the high school is considered unprogressive.

Few will deny that manual training has had a great and beneficial influence upon our education. That it is, however, inadequate as a system of industrial training is evidenced by the great demand for vocational training now arising in all parts of the country. Some of the existing conditions that show the necessity of such training may be briefly stated in the following paragraphs.

The skilled labor of the country is largely foreign born. The supply of skilled workers is far below the demand and our American boys are not being trained to fill the positions. For years we have been saying, "Every boy ought to learn a trade," but we have provided no opportunities for him to learn that trade. As a helper under a journeyman mechanic he has had a chance to pick up a little of the practice but practically nothing of the theory of the trade.

Our schools are failing to hold the boys until they reach the age when the industries want them, and as a result the years of fourteen to sixteen have come to be known as the "wasted years."

Our education is characterized as undemocratic in that it is planned for the small number who are being prepared for higher education. Where our schools do train for the industries the aim is to turn out captains of industry rather than privates in the industrial army.

These and many other equally valid arguments are today presented to us. As a result our manual-training high schools are changing their names to technical high schools; trade schools are being established, and many experiments are being tried in the field of elementary education. The purpose of this article is to describe one such experiment.

In December, 1907, one of the leaders of industrial educational work in this country said to a Rochester teacher, "The way to start a vocational school is not to read books on the subject nor to examine the courses of study of schools already established, but to make an investigation of the needs of the local industries and a study of the 'boy' problem in a given community. The data thus obtained will point the way to the kind of school which your locality requires."

Following this bit of advice an investigation was made by the writer into the conditions and future prospects of the boys in the sixth, seventh, and eighth grades of the grammar schools.

It was found that 14 per cent of the boys of these grades were fourteen years of age or over, were not expecting to enter high school, and were on the point of dropping out to go to work. It was evident, therefore, that any form of instruction which would keep such boys in school for a year or two longer would be of real value. Visits to many of the local factories gave much help as to the kinds of instruction which would best fit boys to get a position quickly and to make rapid advancement after entering the industry. Some of the points mentioned by factory superintendents and foremen were: practice in the use of mathematical principles in actual shop problems; a general knowledge of materials, their kinds, methods of preparation for market,

etc.; a clear and accurate working knowledge of the most common tools of the industry and skill in their use, and lastly, the ability to use time to the best advantage.

Following this investigation circular letters were sent to the principals of the grammar schools and to the parents of those boys who might be expected to enter. These letters explained the purpose of the school, the courses to be offered, and the proposed method of instruction. As a result, one hundred boys applied for admission.

During the past eighteen months three vocational schools, two for boys and one for girls, have been established. A brief description is here given of one of these, known as Rochester Shop School No. 34, which was the first school to be established in New York State under the new industrial education law.

The school was organized in an old eight-room school building not otherwise needed for school purposes. Teachers were obtained from various places, i.e., an all-around cabinet maker was secured from a local furniture factory, one teacher with normal and college training was secured for the book work, and an electrical engineer with practical experience was put in charge of the electrical shop.

The school at the present time has four departments: Cabinet-making, Carpentry, Electrical, and Plumbing, with 26 boys in each department—13 in the first-year class and 13 in the advanced or second-year class. This means that not more than 13 boys will be graduated from each department yearly.

The faculty includes a principal, who spends part of his time in teaching, four shop instructors, a classroom teacher, and an instructor in drawing.

The Cabinet-making Department is a complete little factory with its glueing-room, machine-room, assembly room, and finishing-room. In this department there is division of labor, the boys being promoted from one branch of the work to another as soon as a reasonable degree of efficiency has been acquired. Following is a list of articles now being manufactured:

LINE OF PRODUCTS FOR 1910

ELEMENTARY	ADVANCED
25 large drawing-boards	50 bookcases, 2 designs
100 primary looms	120 desk chairs
25 pillow looms, with heddles	20 teacher's sanitary desks
100 drawing-kits	12 music cabinets
25 sawhorses	Sample line for the following year
50 sewing-boxes	
36 manual-training benches	
12 umbrella racks	

Any article to be included in the "line" of products must meet two conditions: (1) it must be something needed in the schools and which the Board of Education would otherwise purchase; (2) it must have educative value for the pupil. Many needed articles are rejected because the making of them would teach the boys little or nothing. The instructor of this department personally directs the work of the machine-room and supervises the work of the other rooms largely through boy foremen. The

COST OF ROCHESTER SHOP SCHOOL

DECEMBER 1, 1908 TO JANUARY 1, 1910

(Including the Summer Session)

	General	Cabinet-making Department	Electrical Department	Total
Equipment	442.76	2,132.62	335.21	2,910.59
Sinking fund (10 per cent of equipment)	44.28	213.26	33.52	291.06
Salaries	1,954.00*	1,965.00	1,250.00	5,169.00
Material	1,078.12	1,746.48	486.97	3,311.57
Drawing supplies	74.95	.....	.....	74.95
Repairs	257.44†	.....	.....	257.44
Totals	3,408.79	3,924.74 (1,859.35)	1,770.49 (1,549.44)	9,104.02
Grand totals	.....	5,784.09‡	3,319.93§	9,104.02
Credits¶	.....	2,631.50	308.14	2,939.64
Net totals	.....	3,152.59	3,011.79	6,164.38
Average cost per pupil	.....	63.05	60.24	61.64
Average cost per pupil (10 months)	.....	52.54	60.24	56.39

* Includes cost of lighting and heating.

† The general expense is apportioned between the Cabinet-making and the Electrical departments.

‡ Includes the product of the Cabinet-making Department. This department was on a productive basis for nine of the twelve months.

¶ The item of credits gives the value of the work performed by the pupils.

§ Covers the 63 jobs of electrical work in the various school buildings of the city. The Electrical Department was on a productive basis only three of the ten months (October 1 to December 21).

cost accounts of each department of the school are kept separately. The table shows a statement which has recently been prepared for the Board of Education and which shows the cost of two of the departments for the first year.

ARTICLES MADE

200 Bookcases	25 drawing-tables
18 kindergarten tables	62 sawhorses
32 saw boxes	25 bench rests
25 drawing-boards	15 miscellaneous articles
12 sewing-boxes	200 looms
100 toy knitters	700 panels

The following are typical examples of the work done:

October 1—Replacing telephones, School No. 23.
October 15—Installing buzzer, Board of Education office.
November 2—Repairing gongs, School No. 4.
November 9—Installing lights, East High School.
November 17—Repairing fire alarms, School 27.
December 15—Installing spot light, School No. 14.
December 20—Repairing stereopticon, School No. 26.

The Carpentry and Plumbing departments have been in operation less than a year and the expense of maintenance cannot be given. The cost of equipment for these departments would not exceed $300 each.

The carpentry, plumbing, and electrical shopwork taught in the school is much the same as would be taught in any trade school in these branches. The really valuable and vital shopwork however, is the installation and repair work which is being done in the various school buildings of the city by the groups of boys sent out from the shop school. It is often said that no trade can be taught in a school, yet, when the school shopwork is supplemented by the doing of all kinds of real work under the varying conditions which constantly arise, the opportunities for a thorough grounding in the craft are immeasurably increased. This outside work is much more interesting to the pupils than any work which would be constructed merely for the sake of construction and which would have to be torn down. The confidence

gained by the boys in attempting and mastering these varying problems plays no small part in their progress. Since the materials used in the outside work are not wasted and the labor performed by the boys has a real value and results in a considerable saving to the city, the cost of instruction in the school is brought down to a very conservative figure.

A concrete example of the outside work may perhaps be interesting. On Monday morning a call comes from a grammar school that the fire alarm system is out of order. That afternoon a group of boys visits the school and locates the trouble. The next morning they make out a bill of materials needed for the repair work. If the job is at all complicated they also make the necessary drawings. As soon as the materials are delivered the same group of boys returns to the school and makes the proper repairs. In many cases this work is carried out under a boy foreman and only inspected by the instructor when completed.

At this moment of writing (March 15, 2:30 P.M.) one group of boys from the Electrical Department is at school No. 33 putting guards on the lights for basket-ball, a second group is at school No. 23 repairing the lighting circuit, and a third group with an instructor is at school No. 13 repairing the intercommunicating telephone system. A group of boys from the Plumbing Department is setting and connecting a sink at No. 34. A group from the Carpentry Department is building teachers' lockers for school No. 25, and a second group is erecting a portable schoolhouse in the rear of the shop school.

In the drafting-room the boys make the designs, working-drawings, tracings, and blueprints of the articles to be constructed in the shops and of the work called for in the various school buildings.

The courses in drawing and mathematics are outlined by the shop instructors to meet the demands of the shopwork. The ideal toward which we are working is this: today the need of some formula is met in the shop; during the next period in the classroom the pupil will have an opportunity to work out this formula. How completely this ideal can be realized is as yet a problem. The effect of this correlation is that the incentives for

book work are direct and vital rather than indirect and unappreciated, as is often the case in ordinary school work.

The work of the classroom is largely individual. Since boys are admitted at any time during the year it follows that general class work in some subjects (i.e., drawing and mathematics) is impossible. Pupils will also be graduated at any time in the year at which the course will be finished. The average length of time for the completion of any course will be two years.

This individual rather than class graduation will decidedly simplify the matter of finding positions for the boys as they leave the school. Textbooks to fit the various courses are at present being worked out by the instructors. The time given for the various subjects is as follows:

Shopwork, 15 hours weekly.
Mathematics, 4 hours weekly.
English, 3½ hours weekly.
Drawing, 5 hours weekly.
Spelling and industrial history, 2½ hours weekly.

The school day is six hours in length, except for the groups who go in the afternoon to outside work. For these the working day would probably average 7½ hours.

The question is often asked regarding the attitude of the labor unions toward the school. So far the most friendly spirit has been maintained on both sides. Every effort is made to keep the local unions fully informed regarding the plans and methods of the school.

While it is altogether too early to make any predictions regarding the future of the school or its real value to the boy or the community, it is certain that a school of this type will reach and holds many boys for whom the grammar or high school has no attractions. To such boys a shop course gives a new interest and a new sense of successful accomplishment. The real test of the value of the training, however, will come when the boys graduate and enter the industries.

A careful following of the boy after he begins his life-work and a study of the defects in his preparation will afford most valuable data for the improvement of the courses.

AGRICULTURAL EDUCATION: EDUCATIONAL PERIODICALS

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The number of educational periodicals published in the United States probably exceeds that on any other subject. Most of these publications are in the library of the United States Bureau of Education. In 1906 they numbered one hundred and fifty-six (64).[1]

For purposes of classification the periodicals included in this number may be considered fairly representative of all such publications in the United States. They naturally fall into three groups: (1) general, including those devoted to subjects of general interest or to various general problems in education, and whose circulation is not limited to any particular section of the country or class of readers; (2) special, including those devoted to some single phase of education, as, for example, orthography, penmanship, phonetics, geography, school art, manual training, science, etc.; (3) local, including those whose main circulation is confined to a single state or group of states.

The bibliography alone of contributions and references to agricultural education in these periodicals would occupy several times the space allotted to a single article of this journal. It will therefore be necessary to confine the discussion of this subject, as represented in various educational periodicals, to some references of historical interest in Barnard's *Journal of Education,* and to a brief account of each of the above three groups.

No investigation of an educational movement would be complete without consulting Barnard's *Journal of Education.* "Wherever libraries of education are now gathered his encyclopedic journal has a place of honor. Whoever will found such a

[1] The references are to the bibliography at the end of this article or to bibliographies in other articles of this series.

library must look first to secure a set of this great work. Because he saw so far, the contents of that great work will not soon grow out of date." (65). In this work are many references to agricultural education. Three are worthy of special interest: early agricultural schools; agriculture in schools for homeless children and in schools for delinquent children; and agricultural education in foreign countries.

An account is given of probably the first agricultural school in the United States. It was founded in 1797 at Lethe, S.C., by Dr. John de la Howe. He left a will which provided for the endowment of "an agricultural or farm school in conformity, as near as can be, to a plan proposed in the *Columbian Magazine* for the month of April, 1787, for educating, boarding, and clothing twelve poor boys and twelve poor girls of the Abbeville District." The endowment consisted of 500 acres of farm land and 1,000 acres of forest (66).

An account of another early school is of interest because it anticipated some of the present notions of industrial education. The following is a quotation from a letter of a Mr. Coe to the son of Josiah Holbrook, the founder of the school:

> He [Josiah Holbrook] had long cherished the idea of endeavoring to found an institution in which the course of instruction should be plain and practical; an agricultural school, where the science of chemistry and mechanics and land surveying should be thoroughly drilled into the minds of the pupils by practice. With these views the agricultural seminary was commenced in Derby (Conn.) in 1824, and continued to the fall of 1825, under the direction of your father and myself; and, as far as I know, was the first educational movement of the kind in all that region. . . . . We did what we could to train the students in the *analysis of soils* and in the application of the mechanical powers to all farming operations, and took out our young men often into the field and country for practical surveying, geological excursions, road making, and the labors of the farm; but not being able at that time to place the school on an eligible foundation, it was abandoned (67).

Josiah Holbrook after giving up his school turned his attention to adult instruction which was somewhat like our present agricultural extension among farmers.

Our present organization of agricultural colleges is very

similar to a plan for such schools proposed in Barnard's *Journal of Education* in 1856 by Professor John A. Porter of Yale. This was the year after the act establishing the first agricultural college (Michigan) was passed and the year before it was formally opened. He deplored the lack of agricultural instruction in this country and suggested that such instruction might be supplied by having a demonstration farm, an experiment farm, and means of instruction in all sciences connected with culture of the soil. He says:

> What a center of light would such a school as here described be to the whole agricultural community. All purported discoveries in agriculture would come to be tested, and important truths developed by experiment would go forth from it into the world. . . . . Through its pupils it would disseminate widely the varied practical information which its courses would furnish, and beyond this, it might be made a means of eliciting the experimental labor of hundreds of intelligent farmers throughout the country, for the decision of the important agricultural questions which are still unsettled (68).

In a footnote at the end of the article the editor calls attention to an account in his *National Education in Europe* of the system of agricultural education established in France as it was in 1854, and also to the Institute of Agriculture and Forestry in Würtemburg, and the system of agricultural education in Ireland.

Pestalozzi and his work, particularly his influence on our own school practices, receive much consideration in the journal under discussion. For example, we find the historical beginning of nature-study in this country in the object-teaching at Oswego. This attempt to put his doctrine into practice is described in great detail (69). In another place Pestalozzi is quoted as saying with reference to objective teaching that "agricultural labor offers a wider field than any other employment for this means." This statement should be contrasted with the absurd efforts made in some schools to apply these principles. It would be interesting in this connection to trace the influence of these early object-lessons on nature-study teaching and to discover to what extent it is responsible for the struggle which nature-study has had to find a legitimate place in our schools.

The agricultural school of De Fellenburg and Wehrli was a

school for the poor at Hopwyl, and many of the pupils were juvenile offenders of various sorts (70). Several Fellenburg schools were established in this country in the early part of the last century. The *Journal* brought the work of these schools in this country and in Europe into notice again. About the same time there seems to have been a revival of these methods in certain schools and institutions in this country. Practically all of the reform schools for boys in the United States are now provided with farms, and agriculture is an important part of their work. How much influence, if any, the *Journal* had in bringing this about we do not know. But we find it giving, on the one hand, details of such work as in the agricultural school just referred to, and on the other, accounts and discussions of reform schools and institutions for homeless children in this country (71).

Education in foreign countries occupied a prominent place in the *Journal*. From time to time accounts of agricultural education in various countries appeared. A good example of these accounts is to be found in one devoted to agricultural education in France and about twenty different parts of the world. This is a part of an exhaustive study of scientific instruction applied to national industries in different countries (72).

The first group of educational periodicals—those mainly devoted to general problems of education or to publication of educational research—is quite small in number compared with the other two groups. Their circulation is also much less than most of those of the third group. Notwithstanding their small number and limited circulation these periodicals contain some of our most valuable educational literature, and are, on the whole, a source of high authority in educational matters. The attention given to agricultural education is much less than would seem to be warranted in view of the great public interest in the subject and of the fact of its rapid introduction into schools of various sections of the country. Compared with other sources the literature on this subject as found in the leading periodicals of this group is very meager (Barnard's *Journal* excepted). A few of the earlier articles discuss how agricultural education might be

gradually developed in the elementary and secondary schools. Some work of an extension character was regarded at that time (1900–1) as the most feasible and practicable, nature-study, reading courses, itinerant schools, and short courses being suggested as the best means of creating an interest in the subject (73, 74).

A little later the place of agriculture in our public-school system is carefully considered with conclusions favorable to its introduction (75). In the meantime the subject is being rapidly introduced in our schools, and certain tendencies are arising that are viewed with some alarm because they are not in harmony with the national policy in school matters. An editorial in one periodical calls attention to some of the dangers arising from the establishment of agricultural high schools:

> If the new type of work means the establishment of a *separate* system of high schools, the existing high schools will be sapped of the very means of their existence. . . . . There is one other and more urgent reason why a separate class of high schools must not be allowed to spring up. Just as sure as they do they will breed social distinctions and cause stratifications in society. It has been our boast that children of all nationalities, occupations, and creeds enter our schoolroom doors and emerge together as American citizens. The American public school is the greatest factor in developing American citizenship that we possess, and its function in developing American citizenship is greater than teaching arithmetic, Latin, or trades. Social efficiency is much more needed just now than business efficiency. But alas, too many are thinking only of business acumen. . . . . The one who argues for the establishment of a separate system of agricultural high schools or separate industrial high schools is wittingly or unwittingly an enemy to our present high schools and to true democracy (76, pp. 57–59).

The implication in this editorial that existing high schools furnish all that is really needed in secondary education is open to question, and soon brings a rejoinder:

> I am afraid that the distinctions are here or have got to come, and that the high schools which are nothing more than college preparatory schools will have to sink into relative insignificance compared with schools which will teach the masses how to make a living as well as how to live. . . . . We need as never before many-sided men and women, but men and women who will put how to live and how to make a living first, and how to use one's leisure second (77, p. 199).

At present the importance of the problem suggested in the foregoing discussion is being appreciated, and all the more because agricultural high schools continue to be established. Besides general discussions of the whole question of industrial education as related to elementary and secondary schools two plans for agricultural education in existing high schools are proposed and are being considered. For example, one writer believes in the correlation of high-school science and agriculture and gives numerous illustrations to show that "the benefit of correlation inures as well to the fundamental sciences as to their application in agriculture" (78). Another thinks that agriculture should be taught as a separate science. He says:

"Educators are coming to see more and more clearly that agriculture is both a science and an art, and as a result it is being taught in ways which are not strictly applicable to the teaching of other sciences." He sums up fifty-six replies to a questionnaire sent out to secondary-school men and college professors and concludes that a "majority who have had actual experience in teaching the subject advocate its being taught separately (79)."

Among the periodicals of the second group two are devoted to special phases of education that include agriculture. One is *School Science and Mathematics* and the other is the *Nature-Study Review*. The former is published in the interest of secondary education and the latter of elementary education. The editors and associate editors of both periodicals are well-known schoolmen who are actively interested in the various problems of education of their own special lines of work.

In a recent number of *School Science and Mathematics* we find among the introductory sentences of an article on biologic science in secondary schools the following:

> This is pre-eminently an age of applied science; it is an intensely practical age; the average individual comes in daily contact with problems of science as never before. It is self-evident that science work in elementary schools should play an important part in the education of our youth who go into life—as a vast majority do—with no further fitting than that received in the elementary school or secondary school. It was with this thought in mind that the writer began the following preliminary investigation which aims in the first place to present some statistics bearing upon

> the teaching of science, and especially of biologic science, in the secondary schools, and in the second place to suggest possible modifications in our present courses in biologic science that will make such courses a better preparation for the kind of life into which most of our young people are launching, the active life of the thinking, doing citizen (80).

This somewhat lengthy quotation with respect to one secondary-school subject is given because it represents very well the general attitude of the recent contributors to this journal. Agriculture is closely allied to all of the fundamental sciences and any such modifications of science teaching as indicated in the above reference will have an important bearing on agricultural education in the secondary schools. These contributors are already teaching particular branches of science, and their writings have to do with their own subjects in relation to agriculture rather than with agriculture as a separate subject.

The general field covered by the *Nature-Study Review* includes, as is stated in the introduction to the first number, "school gardening and the closely allied elementary agriculture" (81). This magazine is now in its sixth volume and has published numerous articles on agriculture as adapted to the elementary schools. For awhile, from September to December, 1909, a special department of school agriculture was conducted. But it was abandoned, the policy now being to devote certain numbers exclusively to this subject, as in the May number of the present volume.

The third group includes about one hundred periodicals in which every section of the country is represented. It is through these that the masses of the teachers are reached. In many states some educational periodical becomes a sort of official organ for the state department of education. Practically all whose subscribers are teachers in the rural schools give considerable attention to agriculture, mainly in the way of suggestions and helps to teachers. The effect of these periodicals on the actual teaching of agriculture in the public schools has been, up to the present, far greater than of any of the first or second group. One periodical, the *School News* (Illinois), has been referred to in a previous article of this series (42). It was one of the first

to take up elementary agriculture in response to the new demand upon the rural teachers. In 1900 it began to publish short articles on various phases of agriculture adapted to the elementary schools. The practical efforts of this magazine to help the rural teachers is further shown in connection with the new course of study for the state of Illinois. This course includes agriculture. The department of the magazine devoted to school work in agriculture expands the course of study in agriculture into descriptive details and gives specific directions to teachers as to how to present the new work (82).

The *Nebraska Teacher,* besides publishing special articles on various phases of agriculture, is now publishing a series of articles by Superintendent E. C. Bishop on "Agriculture and Home Economics" (83). These articles are intended to assist teachers in their work with the boys' and girls' clubs of the state.

Many similar examples might be given but these two are typical of the work that is now being done by many if not most of the periodicals of the third group. They are close to the teachers and seem to know what they need, or at least what they want, and give it to them in a simple and concrete way.

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THE TEACHING OF MORALS IN GUATEMALA[1]

ROY TEMPLE HOUSE
Weatherford, Okla.

At least one of the little Central American states is making an earnest and consistent effort to prove her title to serious consideration. The government of Guatemala is now sending her official publications to educational institutions in the United States. Guatemalan documents run somewhat to poetry and rhetoric, but statistics and real information are not lacking, and the series furnishes valuable data for a study of the ambitious little state which issues them.

The treatise on morals to which the present article calls attention has been in print for ten years, but it was sent out as a government bulletin only a few weeks ago, and has probably been hitherto quite unknown to American educators. The fashion is so nearly universal with us of tabooing formal instruction in morals, that the title of the volume may discourage examination of it. But read the compiler's preface before passing adverse judgment; and ponder especially that part of it which gives specific instructions for its use. You will meet a frank admission that a class in morals, devoting a definite period to the study of that excellent but somewhat dreary subject, would accomplish considerably less than nothing; but it does not follow that a text like the one we have before us (says the estimable Latin educator) cannot be productive of untold good. Let every teacher in the school, no matter what his subject, master this volume's content and arrangement and lay it on his desk as a weapon to be used when occasion arises.

Suppose now that while a mathematics class is in progress, the master, furtively watching the conduct of his audience while ostensibly intent on the current demonstration, should notice

[1] Rafael Spínola, *Moral razonada.* Primer Curso. Guatemala, Tipografia Nacional, 1900.

that a certain hard-hearted youth on the back seat is torturing a fly; he must interrupt his demonstration and warn the children that cruelty to animals is a mistake and a sin; and to complete his lessons in morals, he should call the offender forward and force him to read aloud to the class the chapter which deals with our duties toward the other members of the animate world. Or again, suppose a child appears in the grammar class with soiled hands or clothing; it is advisable that the teacher suspend his discussion of the parts of speech till the offender has read to his fellow-grammarians a few paragraphs from that section of the ever-ready reference volume which deals with the care of the person and clothing. Latin grandiloquence is always somewhat amusing to an Anglo-Saxon; but the constant binding of general principles to individual cases of application is the only effective method of teaching morals, as it is the only effective method of teaching anything else.

We are told that the volume before us is for the use of the primary schools only; that the same author has compiled a *Tratado de Moral Filosófica y Pedagógica* for study in the secondary schools for boys, and another for the schools for girls, in addition to a companion volume to the one we are now discussing, which is to be read by and to the smaller girls. For the audience to which our book is addressed a large part of it seems to handle questions in a manner that has a trifle too much of subtlety; and such subjects as the moral basis of matrimony, for example, seem a little out of place in a book intended for the use of small boys; but the second criticism, at least, is met and faced by the author in his preface. It is unfortunately true, he reminds us, that the majority of boys never reach the advanced schools at all, hence it is necessary to give them at this time advice with regard to all the problems of later life, or they will never receive it at all. One might retort that several eminently useful branches of study which are reserved for the higher schools might on the same ground be given to small children; but such a retort is scarcely an argument, and there is something to be said for Señor Spínola's inclusion.

The book is a large one. There are nearly six hundred

pages, of which perhaps one-fourth is the author's own discussion of manners and morals, and the remaining three-fourths a selection of appropriate reading material from classic sources. It flatters an Anglo-Saxon reader to find that the author who is perhaps most generally quoted is the English moralist Samuel Smiles. The selection is surprisingly varied, and on the whole is an extremely good one. There is no school reader published in the United States which draws its material from so wide a field. An English translation of the *Moral Razonada* would furnish the child such a collection of classic discussion with an ethical bent as is scarcely accessible to him at present.

A very practical section of the book is formed by thirty pages of social "don'ts," as to whose origin we are furnished the somewhat hazy information that "The author of this excellent Compendium of Urbanity is anonymous, and it is translated into Spanish by the young Don Enrique Díaz Durán." One wonders a little concerning the practicability or advisability of warning the ten-year-old boy who perhaps owns just one suit of clothes and one pair of trousers at a time, "Do not wear black clothing in the morning, or at least do not wear black trousers with an ordinary sack coat; wear them only in the evening;" and there is a charming naïveté that an Anglo-Saxon can only admire but never emulate, in the injunction, "Do not whistle in the street, in a public vehicle, in church, at the theater, the circus or any public gathering, or in any place where whistling might annoy anyone. I might better say: Do not whistle anywhere." It is a little puzzling, again, to read on p. 115 a moving picture of the evils that inevitably follow the use of tobacco, and on pp. 370 and 379 a set of careful directions to be observed by smokers. In general, the rules here given are the rules observed in polite society north of the Rio Grande, and it is probable that drilling them into the hard head of a ten-year-old youth will make him more of a gentleman, even if he does struggle a little at the time of injection.

Though two of his most frequently cited authorities are Samuel Smiles and Benjamin Franklin, Señor Spínola is no utilitarian. Let us translate a part of one of his earlier para-

graphs, retaining the typography that gives the book one element of its quaint charm:

A very essential quality of virtue.—In order that virtue be GENUINE and not a FALSE virtue, it is necessary that he who practices it have not sordid self-interest in view, and that he do not practice it either from FEAR OF PUNISHMENT or HOPE OF REWARD; such motives degrade the reason of a man, which is what constitutes his DIGNITY AND SOVEREIGNTY. Virtue should be practiced for VIRTUE'S SAKE ONLY. . . . .

And may this earnest treatise inspire the young Guatemalans to a love of the right that will save their country from the errors that have retarded neighboring states!

THE SCHOOL AND THE LIBRARY[1]

CHARLES H. JUDD
The University of Chicago

It gives me great pleasure to appear before this gathering as the representative of the National Education Association. I do not know what qualifications are ordinarily sought in such a representative, but I judge that two are at least permitted. First, one must be unable to attend the meetings of the National Education Association itself, because it is so far away; and second, one must be supplied with a liberal lack of knowledge of library science. Whatever the qualifications of the representative it is an easy task to say to the Library Association that there is a close bond connection and sympathy between the two associations. We who teach cannot do the work of the schools without recognizing our dependence on the work that is being done in the community by the library; and I venture to assume that you feel the reciprocal relations yourselves and recognize the importance of a good school in a city where you conduct a good library.

If I make an effort to comment in any wise upon library matters I shall have to confine myself to those aspects of library work which have to do directly with school organization. I am not competent to speak on your larger problems of the library and the community. But certain it is that we are developing within the schools themselves more work of the type in which you are interested.

There are two general lines of discussion and interest which it seems to me proper for one who is interested primarily in the school to present to those of you who are interested primarily in libraries. First, let me say that we are coming to see that the study period in the school is more and more the

[1] Address before the American Library Association, July 2, 1910, at Mackinac Island, Mich.

place where the kind of work that you do in the libraries can very properly be introduced and enlarged. All of you know from your own personal experiences as students if not from your experiences as teachers—and I am sure many of you have had this latter form of experience—that the period when students are supposed to study has heretofore been a period when they have been separated from everything except a single textbook or possibly the small supply of books that they could have in their desks, and then they have been called upon to be extremely quiet while they studied. They have been called upon to obey the directions of someone in charge of the study room and the function of that person in charge of the study room has been a rather trying function; it has been the function of keeping order in the room, not the function of contributing in any lively way to the actual educational progress of the school. The study-room period has been a time when the teacher has been allowed to catch up with her reports or to catch up with some needed work and perhaps at times to catch up with her personal correspondence. At all events, it has been an occasion when the intellectual contact between the school and the children has been somewhat curtailed and the school is not supposed to be wholly responsible for anything except order. It has been a partial substitute for home study, the assumption being that the home study would not be done so vigorously because nobody at home would be delegated to watch with equal care over the reluctant studier. Today we are modifying all this and many of us are interested in seeing it further modified. I am sure that it is appropriate for me to enlist if I can the sympathies of this association for the modification of that sort of a study hour in the schools. I think the ideal study hour is a study hour in a room filled with books exactly as any reference library is filled with books. I think the kind of order which should prevail in that room is the kind of order that prevails in any well-organized library; the student should have the opportunity to leave his individual desk and refer to the books which give him enlarged information; he ought indeed to be encouraged to leave his own desk

with its meager supply of books and he ought to go from shelf to shelf within any limits of reasonable attack upon the subject in hand. It seems to me there is the finest kind of an opportunity for training of a type of study that is not common in the individual recitation room. As a matter of fact we are doing more and more of this sort of thing in the individual recitation room; we are asking children to bring into the elementary schools and we are asking the older students to bring into their high-school classes reports of what they have looked up in the libraries, and we are encouraging them to go in a larger way to the shelves; but if we could give them definite training in how to do this, if we could have the teacher who goes about the study room engaged not merely in keeping order but in helping the students to refer to books, giving them a kind of training which we all of us recommend as important, giving them a kind of training for which heretofore no individual officer of the school has been set apart,—I say if we could make these study periods genuine periods of training in the use of books, in the use of a library, it seems to me we should add, without encumbering the course of study, a very important line of training. We should thus reduce watching and keeping order to their proper place of minor importance and elevate to its proper place of major importance the function of using many books. In other words, we should carry over, if you please, a portion of your domain into our domain. We should not only have the schools made the depositories for the books from the public library, but we should have the study period itself transformed into a period of library study or training in library methods.

If this transformation of the study period seems as important to you as it does to me, let me urge upon you the responsibility for contributing to this movement. We cannot work this out merely from the side of the schools; we must have the co-operation of the technical librarian who comes into the school with an idea that is perhaps specialized, perhaps different from the ideas of the ordinary teacher who is acquainted with the ordinary study period. We must have the contribution, from

the side of the librarian, of enthusiasm for this kind of work. We have such a study room as this in one of the schools with which I am connected. It was suggested by our librarian and is being worked out with her co-operation, and we regard it as one of our most progressive lines of organization.

Perhaps you cannot bring about the change suddenly, but you could easily begin to introduce it on a small scale, especially if you are situated near the schools or if you have branches in any of the schools. You might very properly encourage the school authorities themselves to delegate to you the authority to conduct one of these study periods. I know you are busy like the rest of us, and just as soon as I make the proposition that you take over this new task I have no doubt that my suggestion will be received with enthusiasm by school authorities and with corresponding reserve by librarians. My function however is to represent the school authorities. I see, therefore, very clearly how you might make a beginning in some such fashion as this: you might make the proposition that you would take care each day of ten such students for one or two periods. Ten students, you know, are very simple to handle. Students get difficult to handle only when there are fifty of them together and then the accumulated momentum of fifty devices for making a disturbance is so great that you have a disciplinary problem; but the accumulated momentum of ten devices for making a disturbance is relatively very small and any able-bodied librarian, with sufficient self-assurance, can put a check to those ten devices without great difficulty. I should say that it might be well for you to get the school authorities to arrange the program. You can make your period with them very attractive to the children. Suppose you get the school authorities to make the program on a given afternoon that the children should be deliberately let out of a certain school to the number of ten and be allowed to go to the library. Of course children go to the libraries now, but let us arrange this as a deliberate substitute for the old-fashioned study period and let us make this new study period an opportunity for training in the methods of the use of books. If we do this I feel sure we

shall bring together our two institutions in a very productive fashion.

There is another line of interest which I am here to suggest to you. We cannot co-operate intelligently unless we recognize some differentiation of our functions. I do not think it is at all fair to say that the school and the library are doing the same thing. We differ in the first place in the fact that you reach a very much larger community than we can reach in any given year; you reach an older and maturer reading constituency and thereby your function is differentiated from ours in the school. There is another way in which your function differs from ours. Perhaps you have thought this out more clearly than I, perhaps I am bringing coals to Newcastle in suggesting it—but it has always impressed me that you have the advantage of us who teach in the schools in the fact that you use books as wholes and we use books in very small sections. Have you ever been impressed with the fact that when a book is used by a class in a school it takes a year or half a year to read it, and students get notions about the difficulty of going through a book which are altogether distorted; they get the idea that a book must be read in small doses; that when you have finished up one reading you should set that particular reading entirely aside, put it out of your mind as soon as possible so as not to be impeded by any memory which you may have accumulated out of that small section as you pass on to the next? If we have bad habits of this kind in the schools you who work in libraries see the opposite vice. You see people who come in and read a book in fifteen or twenty minutes. Furthermore, you have people among your readers who are mature enough and well trained enough to make rapid reading of a book a virtue. They know how to select. They read the book at the important point and then decide whether they should read the other parts of the book. The art of rapid use of books is one of the arts which we have been learning in the schools very gradually. We are just beginning to see that children can be taught to deal with books as wholes, that they can take up books, not those that we use merely as textbooks, not those that are marked off by

heavy headlines so as to impede progress, but all books containing relevant matter. Children should learn that some books are made for rapid use. Many books ought to be looked over and a large part of the contents, for the moment at any rate, neglected or even discarded. That is, the use of a book as a whole for the purpose of extracting from it some information or for the purpose of getting a broad general view is just as legitimate as the dull grinding over a textbook. We can change the attitude of the next generation toward books, provided we can have some help, and the help which we ought to have, you are in a position to give us. If you would help these students when they come to you to pick out those portions of a book which are of advantage and if you would make it your business, or if you would encourage the teachers in the schools with which you are connected to make it the business of those schools in co-operation with you, to help children to learn the methods of using whole books and extracting the valuable part from books, then we should have a very large addition to our pedagogical machinery. You know what I mean. You ought to have special card catalogues, it seems to me, prepared by teachers and by yourselves which will refer in detail to a number of different books citing chapter and verse, helping out a faulty index or supplementing a good table of contents.

Again, I realize that I am unloading on the Library Association a duty, which if your representative were speaking this morning before the National Education Association he would be unloading on the teacher. Such preaching of new duties is, however, the privilege of a prophet who is far away from his home constituency and in the presence of others who have nothing to do but spend their time on beautiful islands holding conventions. To charge you with any remissness in your duties is certainly not my function this morning, but think of the great catalogues that might have been made up this morning if this whole body had set itself about the business of telling where all of the information could be had about certain phases of fifth-grade geography or history! The trouble with the children when we turn them loose in a general library is that

they have not the machinery for the use of that library; and then—frankly apologizing for that great body which I represent and which is absent today—many of us who teach have not the machinery inside of ourselves, if we wanted to give it to the children. A library is very formidable to a newcomer. Even the material equipment impedes one's progress. I have long wished for an opportunity to tell the makers of card catalogues that they ought to invent an automatic device for turning cards, especially where there are one hundred and fifty on the same subject. Your spiritual equipment I have never doubted, but your material equipment is very difficult to handle and it gets more and more difficult when you offer it to a child in the grades. When you see somebody who is just four feet high confronting a bureau of information that is six feet high, with the top drawers of A's just out of reach, you can realize how that saps the enthusiasm for the use of a library as a source of material related to fourth-grade geography. What we need is material worked over in such a way that pupils will be encouraged from the beginning to realize that the book which is given to them in the classroom is nothing more nor less than a sample and very frequently a meager sample, a sample that raises a great many questions and answers very few. He ought to learn that if the questions thus raised are to be answered they must be answered in the larger book shelves accessible in the libraries. Our duty, and if I may venture to preach, your duty, is to make that path, especially for the early students, very much smoother than it is at the present moment. For my own part I am not at all persuaded that the path hasn't got to be worked out in very much greater detail even for older students. Parents come to us in our schools very frequently asking for lists of books that should be read, lists of books that shall be specifically appropriate to the needs of the boy and the girl in the sixth, seventh, and the eighth grade. This kind of specific preparation of a library to introduce the student to whole books without throwing the whole library at him; to give him the machinery by which he shall be able to extract certain portions of your shelved wis-

dom; to encourage him little by little to expand upon the way in which we use the books in the school—that is someone's general problem. I think we who teach have made the mistake, which I confess very frankly, of tying ourselves down too closely to the single book. We are breaking away from that somewhat. We are trying to get children to use books as wholes, and if you would come at it from your end of the problem, where you deal with the library as a whole, and if you will begin to narrow somewhat the total view, we shall meet each other half way. We shall get our pupils to raise a certain number of questions and then shall push them out into the library to get their questions answered. Thus we shall develop the kind of co-operation which is at all worth cultivation—that co-operation which permits of the differentiation of function. I do not believe libraries are going to swallow up the schools, at least for some time, nor will the schools swallow up the growing institutions which you represent. The school is very hospitable to the movement of introducing into the schools branch libraries; indeed, the school is eager for all possible reciprocity between our two great educational institutions. You reach a larger constituency than we do; you reach your constituency in a somewhat different way. We are trying to prepare the future constituency for the use of these storehouses of knowledge and art of which you are the custodians. If you will give us a little help in working out some of the methods, of which I think we are relatively ignorant; if you will help the students whom we send to you, then we shall be forgiven for meeting apart each year and merely sending representatives back and forth.

The collection which your executive officers have helped to prepare for the National Education Association is, I am sure, highly appreciated by those who are at the other meeting in Boston, and I have the message from the executive officers of the National Education Association extending to you their very hearty and cordial greetings and their hope for future co-operation of the type which has been possible in the past. Long may there be the warmest sympathy between our two great branches of the public educational system.

EDITORIAL NOTES

Vacation Viewed as an Interruption

One of the educational problems which a summer vacation brings vividly to the consciousness of the community is the problem of determining how much schooling should be provided in a year. Many a parent is fully persuaded on the first of September that school ought to be kept open eleven or twelve months. After a struggle to keep a restless boy properly occupied, after a contest with cheap and unprofitable forms of amusement, many a mother looks forward to the opening of school with relief. The teacher, on the other hand, dreads the task of undoing the ill effects of two or three months of idleness or worse. The slow process of getting a grade under way is a familiar discouragement to all who teach.

Vacation as a Physical and Climatic Necessity

Many who note these facts on the first of September will forget them by the first of November and will accept as before the familiar dogma that vacation is necessary because everyone is worn out at the end of the school year. The summer months, furthermore, are impossible months for intellectual work. One should be idle; one has no energy; one may do himself permanent injury by not relaxing during these months!

Why Not in Winter, or Every Day?

To be sure, there is abundant evidence that many children suffer more from climatic conditions during the rigorous months of the winter and early spring than during the warm months. Furthermore, if we were put to the definite test we should all assert that the ideal educational system is one which so mixes effort and relaxation that exhaustion never appears. We should therefore find it difficult to defend certain of the common statements about the necessity of a long summer vacation. Yet so fixed has the custom of such vacations become that—except on the

first of September—we are likely to ask no questions that shall disturb our practices and beliefs about these vacations. The problem will not down, however. We must deal with it, fully recognizing the facts which at this time in the year are before us. Indeed, there are practical activities now well under way which indicate the direction which our thinking must follow.

Safeguard Against Exhaustion

First, all school activity must be so organized as to furnish its own safeguard against exhaustion. If the older school left the pupil worn out at the end of the day or the year, the new school has prevented this by introducing activity and relaxation and variety.

Training in Recreation

Second, amusement should be mixed with serious work and both should be intelligently guided. The public must learn to play as well as to read serious books and do sums in addition. One of the great discoveries of our social workers is that modern men and women are as clumsy about recreation as they are in other forms of organized activity. We must teach men and women to enjoy themselves and we can best do this by teaching the children in the schools.

Individual Vacations

Third, we should recognize that periods of delay in individual development do not obey any law of the calendar. One child is interrupted in his development at one date, another child at another. If in addition to these individual interruptions we impose a general interruption, the sum for a given child may be very great in a single twelvemonth. Why not provide for continuity in the institution and allow individual needs to dictate the interruptions? This is not so difficult as it seems when stated in this form. The fact is that we are providing now for all kinds of individual interruptions. Children are sick, or families move from one place to another, or parents are negligent until the active truant officer terminates a vacation which does not limit itself to the conventional dates. Whenever a child suffers from one or the other of these irregularities we feel the urgent demand that our school system become more flexible and more complete in its provision of opportunity.

Fourth, economic and social necessity will force us to make a radical change in our present practice. The community has invested in the schoolhouse and ground a sum of money which it will not permit to lie idle during a sixth or a quarter of the year. The plant must be kept open if it can be profitably used. That it can be profitably used is being demonstrated in all of our great cities today. Our vacation school has not only come to stay, it has come to modify the whole conception of public right to use the school. Those who can afford to go away to the country or seashore are in no wise hindered from doing so by the program here outlined. Many of these seek even now the advantages of training camps or schools in the woods. Let those who can afford them out of private means have these advantages of variety in surroundings and instruction. The parallel demand is that those who cannot go to mountain or shore should have for their development the same opportunity that we have always recognized as necessary during the fall, winter, and spring.

Change a Social Necessity

Finally, what will come to the teacher through the adoption of this program? Nothing but advantage. Many a young woman goes into a store or office now because she can there earn wages twelve months in the year. She simply cannot afford the present school vacation. Furthermore, in a well-organized system the teacher, like the pupil, could have some option as to absence from the school. The better school systems are even now providing leaves of absences for teachers and officers. This system of vacation for a reason will doubtless develop. When it becomes an established practice we shall have a more efficient school and a better adjusted staff of instructors.

Vacation for a Reason

BOOK REVIEWS

The Principles of Education. By WILLIAM CARL RUEDIGER, PH.D. Houghton Mifflin Co., 1910. Pp. xii+305.

This is one of the two or three most useful books that have appeared as texts or outlines for courses in the principles of education in colleges and normal schools. In general it is excellent in its selection and organization of material. Most of it can be understood by students who have not had courses in philosophy; in fact, there is little or no metaphysics in it. While necessarily theoretical in character, the practical bearing of the principles discussed is usually obvious and important.

The subject-matter selected for treatment corresponds to part of that very commonly given in the non-metaphysical courses in the principles of education in American universities. "The standpoint of no particular philosophical system is adopted, but the material is presented from the point of view of inductive science."

The relative emphasis on larger topics may be gathered from the following: there are four chapters or one-fourth of the book devoted to the curriculum, its values and administration; three chapters, or about one-sixth to educational aims; the same amount to elemental educational values; two chapters or about one-eighth to the psychological basis of education; one chapter each for the professional training of teachers, biological bases of education, formal discipline, the agencies that educate.

The central thought of the book is implied in Mr. Ruediger's definition of the aim of education "from the biological standpoint as the adjustment of the individual to the life in which he must participate." A chapter is devoted to the interpretation of this statement and separate chapters to other content aims and formal aims which are criticized and compared with the author's statement.

The chapters on the elemental educational value which are classified as instrumental, cultural, and formal repeat to a certain extent some of the points contained under aims.

The discussion of the curriculum includes a systematic classification of subjects, chapters on the value of the humanities and of the sciences and philosophy. In the organization of the subjects into the curricula of the elementary and secondary schools, Mr. Ruediger makes this distinction which some might question: "Just as the distinctive function of elementary education is to impart the tools, conventions, and basal concepts of knowledge, so that of secondary education is general culture" (p. 228).

The author's general point of view might be characterized as eclectic, as not dominated by any one individual or school. Nevertheless, it is evident that Professor Thorndike's influence is a large factor, particularly in the biological and psychological parts of the book. The two psychological chapters summarize the fundamentals of the dynamic part of Thorndike's *Elements of Psychology* and certain phases of the *Principles of Teaching.* The biological chapter reflects the influence of the *Educational Psychology.*

Many of the chapters are followed by exercises for reflection and discussion. Each chapter is followed by a brief select list of reference readings from books which will be found in every normal-school library. Citations to authorities, instead of being made in footnotes, are made by key numbers incorporated in the text to the works named in a list at the end of the book. Mechanically the book possesses the attractive qualities of the rapidly growing Houghton Mifflin series of pedagogical texts.

I have no fundamental adverse criticisms to offer. Some teachers would prefer to see a more adequate treatment of correlation, concentration, and the culture-epochs theory. Others would prefer more of an account of the larger administrative problems of American education and some introduction to their statistical discussion. The college course in the principles of education, when it has been freed from metaphysical tendencies, is sure to become the most fundamental of the professional courses. I imagine it will become the one course that practically all students will take, to be supplemented by educational psychology or methods or the history of education. If this is true, some of the topics mentioned above should certainly be included. But Mr. Ruediger has not conceived his book in exactly this way, and as it stands it contains a wealth of topics all of which should be included in such a course.

I have already alluded to the "comprehensibility" of the book, a virtue which is strikingly absent in many recent texts. It is difficult to find sentences in this book which a normal-school student would fail to understand. There are a few, however, such as "The primordial variation toward differentiated nerve tissue in the multicellular hydroids proved to be a variation in the right direction" (p. 22).

S. CHESTER PARKER

A Comparative Study of the Play Activities of Adult Savages and Civilized Children. By L. ESTELLE APPLETON, PH.D. Chicago: The University of Chicago Press, 1910. Pp. 94.

Miss Appleton has made a study of the play of children and of adult savages in order to determine to what extent they display similar characteristics. The results then bear upon the validity of the culture-epoch theory, so far as play is concerned. The author first examined reports of the play of five tribes which stand lowest in civilization, the Veddahs, Australians, Bushmen, Yahgans, and Eskimos, and tabulated the characteristics so as to indicate the type of bodily activity used, the type and degree of organization involved, and the psychological processes manifested. A similar analysis was then made of the play of five groups of civilized children on the basis of studies made by different persons in different cities. This analysis was carried further by distinguishing the characteristics of the play of children in five different periods.

The author finds, besides certain similarities, marked differences between savages and civilized children which at least greatly modify the parallelism between them. With regard to the bodily characteristics she says: "With the children's group, however, there are in addition to such plays, finger plays, vocal plays, visual, tactual, auditory, and perceptual plays, having almost nothing to correspond to them among the non-civilized adults, but which are

indulged in by quite young children among civilized peoples. . . . . These facts *suggest*, at least, a keener sensitivity and somewhat more specialized muscular control on the part of civilized children." In organization the play of savages most nearly corresponds to that of civilized children from the ages of seven to fifteen. "The parallelism is not complete however, for long before the end of this period civilized children are showing a considerable tendency to organize themselves into societies, both spontaneous and formal." They have, moreover, long since dropped many childish plays retained by adult savages.

"In the psychological characteristics, however, we find the greatest disparity between the two groups. The difference in complexity is very great and beyond this civilized children have many plays in which purely intellectual activity is the attractive element–guessing games, charades, puzzles, geographical games, etc.—a class finding no representation whatever among the tribes here studied."

The results of the study indicate to the mind of the author that evolutionary development has affected not only the civilized adult but also every stage of development of the civilized individual, so that the child does not correspond in his bodily characteristics even, and still less in his mental characteristics, to any stage in the development of the race. "A process of differentiation has been going on throughout the cultural period which has profoundly modified not only the final product, i.e., the product found in civilization, but also all the intervening stages."

The author has collected a large amount of illustrative material in regard to the play of both savages and civilized children, and her monograph is valuable for this as well as for its discussion of the relation between the two types of play.

FRANK N. FREEMAN

Agriculture and Its Needs. By ANDREW SLOAN DRAPER. Syracuse, N.Y.: C. W. Bardeen, 1909. Cloth. 16mo, pp. 92. 50 cents.

This book is a clear and vigorous statement of the present condition and needs of agricultural education in the state of New York. "New York has 226,000 farms averaging 100 acres each, 200,000 of them operated by their owners." An educated farmer rather than a good farm is the direct aim of agricultural education, though the former is scarcely securable without the latter. To give an efficient education to the farmer he must be induced to study his farm. The farm is the laboratory in which the farmer must get a good deal of his education. In New York agriculture is worse off than it was a half-century ago, and the people have not yet fully learned that they not only have not kept pace in modern agricultural development, but have become less efficient than they used to be. Commissioner Draper sets forth with his characteristic vigor New York's present agricultural conditions, her natural advantages, the attractiveness of rural life, ways of increasing earnings, what can be done in the rural schools, the place of the agricultural college, the general dignity of agricultural education in a democracy, and the demand upon agricultural colleges to prepare teachers of agriculture as well as agriculturists.

OTIS W. CALDWELL

BOOKS RECEIVED

AMERICAN BOOK COMPANY, NEW YORK

Champion Spelling Book. By WARREN E. HICKS. Cloth. Pp. 40. $0.25.

A Manual of Debate. By RALPH W. THOMAS. Cloth. Pp. 224. $0.80.

Picture Primer. By ELLA M. BEEBE. With Introduction by CHARLES L. SPAIN. Cloth. Illustrated. Pp. 112. $0.25.

The Adventures of Pathfinder. Adapted from J. Fennimore Cooper's *Pathfinder.* By MARGARET N. HAIGHT. Cloth. Illustrated. $0.35.

C. W. BARDEEN, SYRACUSE, NEW YORK

Fifty Fables for Teachers. By C. W. BARDEEN. Syracuse: C. W. Bardeen, 1910. Pp. 164. Illustrated. $1.00.

A. S. BARNES COMPANY, NEW YORK

Voice Training for School Children. By FRANK R. RIX. Cloth. Pp. 77.

The Song Series, Book II. By ALYS E. BENTLEY. Cloth. Illustrated. Pp. 142. $0.42.

Swedish Folk Dances. By NILS W. BERQUIST. With Introduction by C. WARD CRAMPTON. Cloth. Illustrated. Pp. 53.

P. BLAKISTON'S SON & CO., PHILADELPHIA

Text-Book of Elementary Zoölogy. By THOMAS WALTON GALLOWAY. Cloth. Illustrated. Pp. 418.

A Text-Book of Field Zoölogy. By LOTTIE E. CRARY. Cloth. Illustrated. Pp. 364.

THE CENTURY COMPANY, NEW YORK

A History of the United States. By S. E. FORMAN. Cloth and Half-Leather. Illustrated. Pp. 419+lxxi. $1.00.

CHARITIES PUBLICATION COMMITTEE, NEW YORK

Among School Gardens. By M. LOUISE GREENE. Cloth. Illustrated. Pp. 388. $1.25.

DOUBLEDAY PAGE & CO.

Open Air Schools. By LEONARD P. AYRES. Cloth. Illustrated. Pp. 171. $1.20.

E. P. DUTTON & CO., NEW YORK

The Most Beautiful Thing in the World. By FLETCHER HARPER SWIFT. New York: E. P. Dutton & Co., 1905. Pp. v+57. With illustrations by George Alfred Williams. $0.30.

GINN & CO., BOSTON

Oral Arithmetic. By GEORGE WENTWORTH AND DAVID EUGENE SMITH. Cloth. Pp. 216. $0.35.

Page, Esquire, and Knight. By MARION FLORENCE LANSING. Illustrated by CHARLES COPELAND. Cloth. Pp. 182. $0. 35.

A Practical English Grammar for Upper Grades. By JOHN T. PRINCE. Cloth. Pp. 256. $0.60.

Handbook of Parliamentary Law. By F. M. GREGG. Boston: Ginn & Co., 1910. Pp. xii+112. $0.50.

A Fifth Reader. By FRANCES E. BLODGETT AND ANDREW B. BLODGETT. Cloth. Illustrated. Pp. 481. $0.75.

The Body and Its Defenses. By FRANCES GULICK JEWETT. Cloth. Illustrated. Pp. 342. $0.65.

GOVERNMENT PRINTING OFFICE, WASHINGTON

State School Systems: III. By EDWARD C. ELLIOTT. Paper Covers. Pp. 305.

The Movement for Reform in the Teaching of Religion in the Public Schools of Saxony. By ARLEY BARTHLOW SHOW. Paper covers. Pp. 44.

HARPER & BROS., NEW YORK

Little Miss Fales. By EMILIE BENSON KNIPE AND ALDEN ARTHUR KNIPE. Cloth. Pp. 226. $1.25.

Travels at Home by Mark Twain. Selected by PERCIVAL CHUBB. Cloth. Illustrated. Pp. 143. $0.50.

Making Good; Stores of Golf and Other Outdoor Sports. By F. H. SPEARMAN, VAN TASSEL SUTPHEN, POULTNEY BIGELOW, AND OTHERS. Cloth. Illustrated. Pp. 213. $0.60.

HINDS, NOBLE & ELDREDGE, NEW YORK

The Howell Primer. By LOGAN DOUGLASS HOWELL. Cloth. Illustrated. Pp. 127. $0.25.

HOUGHTON MIFFLIN CO., BOSTON

Old Ballads in Prose. By EVA MARCH TAPPAN. Illustrated by FANNY Y. CORY. Cloth. Pp. 164. $0.40.

LONGMANS, GREEN & CO., NEW YORK

A Bibliography of History for Schools and Libraries. By CHARLES M. ANDREWS, J. MONTGOMERY GAMBRILL AND LIDA LEE TALL. Cloth. Pp. 224. $0.60.

THE MACMILLAN CO., NEW YORK

Elements of United States History. By EDWARD CHANNING, in consultation with SUSAN J. GINN. Cloth. Illustrated. Pp. 349+lx. $0.90.

Elements of Algebra. By ARTHUR SCHULTZE. Cloth. Pp. 309. $0.85.

American Government and Politics. By CHARLES A. BEARD. Cloth. Pp. 772. $2.10.

Selected Essays and Addresses of Thomas Henry Huxley. Edited with Notes and an Introduction by PHILO MELVYN BUCK, JR. Cloth. Pp. 340. $0.25.

Tillers of the Ground. By MARION I. NEWBIGIN. Illustrated. Cloth. Pp. 224. $0.50.

The Building and Care of the Body. By COLUMBUS N. MILLARD. Cloth. Illustrated. Pp. 235. $0.40.

CHARLES E. MERRILL CO., NEW YORK

Mother Goose Primer. By BELLE WILEY. Cloth. Illustrated. Pp. 128. $0.32.

CHARLES SCRIBNER'S SONS, NEW YORK

Ben, the Black Bear. By WILLIAM H. WRIGHT. New York: Scribner, 1910. Pp. iv+121. Illustrated from photographs by the author and J. B. Kerfoot.

All around Asia. By JACQUES W. REDWAY. ("Redway's Geographical Readers.") New York: Scribner, 1910. Pp. xiv+313. Illustrated.

SMALL, MAYNARD & CO., BOSTON.

The Achievements of Luther Trant. By EDWIN BALMER AND WILLIAM MACHARG. Illustrated by WILLIAM OBERHARDT. Pp. 365.

STURGIS & WALTON CO., NEW YORK

Children's Gardens for Pleasure, Health and Educaion. By HENRY GRISCOM PARSONS. Cloth. Illustrated. Pp. 226.

TYP. A VAP. DA EMPRESA LITTERARIA E TYPOGRAPHICA, PORTO, PORTUGAL

Annuario das Escolas Normaes do Porto. II, 1909–10. Paper covers. Pp. 282.

THE UNIVERSITY OF CHICAGO PRESS, CHICAGO

A Critical Study of Current Theories of Moral Education. By JOSEPH KINMONT HART. Paper Covers. Pp. 48. $0.53 postpaid.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS [1]

IRENE WARREN
Librarian, School of Education, The University of Chicago

ALLINE, ANNA L. State supervision of training schools for nurses. Teach. Coll. Rec. 11:41–44. (My. '10.)

(The) American library and museum. Print. Art. 15:189–94. (My. '10.)

ARMSTRONG, J. E. The advantages of limited sex segregation in the high school. School R. 18:339–50. (My. '10.)

ASHLEY, M. L. Experiment as educational method. Educa. Bi-mo. 4: 351–61. (Je. '10.)

BACHMAN, FRANK P. Elimination and repetition. Educa. R. 40:48–50. (Je. '10.)

BAYLISS, CLARA KERN. The development of education. Educa. 30:561–70. (My. '10.)

BEARD, RICHARD OLDING. The university education of the nurse. Teach. Coll. Rec. 11:27–40. (My. '10.)

BEECHING, CANON. Shakespeare as a teacher. Liv. Age. 47:391–402. (14 My. '10.)

BINGHAM, W. VAN DYKE. The use of experiment in teaching educational psychology. Journ. of Educa. Psychol. 1:287–92. (My. '10.)

BLAN, LOUIS B. Retardation of elementary school pupils. Educa. R. 40: 51–64. (Je. '10.)

BLOW, SUSAN E. The service of Dr. Harris to the kindergarten. Kind. R. 20:589–603. (Je. '10.)

BRUNCKEN, ERNEST. The new county library system of California. Pub. Lib. 15:226–29. (Je. '10.)

BUCHNER, E. F. The evaluation of higher education by means of the unit system. Educa. R. 39:511–21. (My. '10.)

[1] Abbreviations.—Atlan., Atlantic Monthly; Cent., Century Magazine; Chaut., Chautauquan; Educa., Education; Educa. Bi-mo., Educational Bi-monthly; Educa. R., Educational Review; Ind. Educa., Indian Education; Journ. of Educa. (Lond.), Journal of Education (London); Journ. of Educa. Psychol., Journal of Educational Psychology; Journ. of Geog., Journal of Geography; Kind. R., Kindergarten Review; Liv. Age, Living Age; Out., Outlook; Pop. Educa., Popular Educator; Pop. Sci. Mo., Popular Science Monthly; Print. Art, The Printing Art; Pub. Lib., Public Libraries; School R., School Review; Sci. Amer., Scientific American; Scrib. M., Scribner's Magazine; Teach. Coll. Rec., Teachers College Record.

CAMP, WALTER. Track athletics. Cent. 80:269–79. (Je. '10.)
CATTELL, J. MCKEEN. The achievements and shortcomings of the American college. School R. 18:369–83. (Je. '10.)
———. The case of Harvard College. Pop. Sci. Mo. 76:604–14. (Je. '10.)
COBURN, LOUISE H. The reader and the library. Pub. Lib. 15:219–23. (Je. '10.)
(The) decline of the university in scientific research. Sci. Amer. 102:370. (7 My. '10.)
DODGE, RICHARD ELWOOD. Geography in rural schools. Journ. of Geog. 8: 202–9. (My. '10.)
DOWNEY, JAMES E. Educational progress in 1909. School R. 18:400–23. (Je. '10.)
ELSON, WILLIAM H., AND BACHMAN, FRANK P. The old vs. the new three R's. Educa. 30:571–81. (My. '10.)
FLEXNER, ABRAHAM. Medical education in America. Atlan. 105:797–804. (Je. '10.)
FREEMAN, VIRGINIA WINCHESTER. The proposed movement for treating stammering in the public schools. Educa. Bi-mo. 4:408–14. (Je. '10.)
GORDON, KATE. Esthetic experience and education. Educa. Bi-mo. 4: 346–50. (Je. '10.)
HALE, WM. GARDNER. Latin composition in the high school. School R. 18: 297–318. (My. '10.)
HARRIS, HERBERT, AND REED, EDWIN C. The fifth annual International Esperanto Congress. School R. 18:395–99. (Je. '10.)
Harvard University course in printing. Print. Art. 15:186. (My. '10.)
HEPBURN, W. M. Public and school libraries of Nova Scotia. Pub. Lib. 15:229–33. (Je. '10.)
HORNADAY, W. T. The right way to teach zoölogy. Out. 95:256–63. (4 Je '10.)
IN-YOUNG. The duties of a Chinese student. Out. 95:125–28. (21 My. '10.)
JOHNSON, DOUGLAS WILSON. The college student's knowledge of geography. Pop. Educa. 27:205–8. (Je. '10.)
KENT, ERNEST B. The elementary curriculum and the industries. Educa. 30:582–90. (My. '10.)
KENT, HENRY W. Art museums and schools. Educa. R. 40:78–81. (Je. '10.)
KING, IRVING. Measurements of the physical growth of two children. Journ. of Educa. Psychol. 1:279–86. (My. '10.)
Library publicity through the press. Pub. Lib. 15:223–25. (Je. '10.)
LOOMIS, H. N. State normal schools and the rural-school problem. Educa. R. 39:484–99. (My. '10.)
MACLAURIN, RICHARD C. Science and education. School R. 18:319–25. (My. '10.)

MANN, C. R. Physics in the college course. Educa. R. 39:472–83. (My. '10.)

MANNY, FRANK A. The process of Americanization in the kindergarten and the school. Kind. R. 20:612–16. (Je. '10.)

MCFARLAND, J. HORACE. University training for printers. Print. Art. 15: 181–85. (My. '10.)

MCILVAINE, CAROLINE M. Chicago historical society library. Educa. Bi-mo. 4:415–18. (Je. '10.)

MILLER, E. A. Moral conditions in Ohio colleges. Educa. R. 39:500–10. (My. '10.)

MINER, J. B. The college laggard. Journ. of Educa. Psychol. 1:263–71. (My. '10.)

NUTTING, ADELAIDE. A brief account of the course in hospital economics. Teach. Coll. Rec. 11:1–6. (My. '10.)

O'SHEA, M. V. Education and the changing social order. Educa. Bi-mo. 4:331–40. (Je. '10.)

PACKARD, JOHN C. A proposed reform in mathematics. Educa. R. 39: 455–58. (My. '10.)

PORTER, MARGARET LOVE. The educational use of dramatic instinct in grammar grade reading. Educa. 30:550–53. (My. '10.)

PRITCHETT, HENRY S. The spirit of the state universities. Atlan. 105: 741–53. (Je. '10.)

REPPLIER, AGNES. The girl graduate. Cent. 80:227–30. (Je. '10.)

ROBINSON, JAMES HARVEY. The significance of history in industrial education. Educa. Bi-mo. 4:376–89. (Je. '10.)

ROUNDS, C. R. The varying systems of nomenclature in use in our texts in English grammar. Educa. R. 40:82–88. (Je. '10.)

RUEDIGER, WILLIAM CARL, AND STAYER, GEORGE DRAYTON. The qualities of merit in teachers. Journ. of Educa. Psychol. 1:272–78. (My. '10.)

RUHL, ARTHUR. Some American preparatory schools. Scrib. M. 47:681–700. (Je. '10.)

RYNEARSON, EDWARD. Co-operation of the business men of Pittsburg with the commercial department of its high school. School R. 18:333–38. (My. '10.)

SADLER, M. E. Education in England. Ind. Educa. 8:437–39. (My. '10.)

SALMON, DAVID. The monitorial system in France. Educa. R. 40:30–47. (Je. '10.)

SHEPHERD, JOHN WILKES. The school garden in large cities. Educa. Bi-mo. 4:390–95. (Je. '10.)

SNEDDEN, DAVID. The achievements and short-comings of the American college. School R. 18:384–94. (Je. '10.)

———. Centralized vs. localized administration of public education. Educa. 30:537–49. (My. '10.)

———. The new scheme for the training of teachers in Scotland. Educa. R. 39:433–54. (My. '10.)

SPANHOOFD, EDWARD. What we might learn from German schools. Educa. R. 40:65–77. (Je. '10.)

STEWART, ISABEL M. Problems of nursing education. Teach. Coll. Rec. 11:7–26. (My. '10.)

THOMAS, JOHN M. The teacher and the community. Educa. R. 39:459–71. (My. '10.)

TIRRELL, HENRY A. The Norwich tests, 1862–1909. School R. 18:326–32. (My. '10.)

WASHINGTON, BOOKER T. Educational engineers. Out. 95:266–67. (4 Je. '10.)

WEBB, E. A. M. Nature study as a means of culture. Journ. of Educa. (Lond.) 41:303–4, 306. (My. '10.)

WHEELOCK, LUCY. The changing and the permanent elements in the kindergarten. Kind. R. 20:603–11. (Je. '10.)

WHITE, FRANK MARSHALL. The epoch of the child. Out. 95:214–25. (28 My. '10.)

WOOD, MARY I. The woman's club movement. Chaut. 59:13–64. (Je. '10.)